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Garden Plants: Problems Caused by an Unexpected Visitor

M. A. Oliveira[1+], C. F. F. Gomes[1], P. L. Gonçalves[1], A. K Casturino[1], R. M. Nogueira[2], L. C. da Silva[2], E. M. Pires[2]

[1] Universidade Federal de Viçosa
[2] Universidade Federal de Mato Grosso, Campus de Sinop

[+] Address for correspondence: maoliveirac@yahoo.com.br

Abstract
Scarabaeidae defoliators are considered of great importance in Brazil because they seriously damage the leaf system of several plant species. The objective of this study was to report the occurrence of the defoliating beetle Bolax campicola Machatschke, 1974 (Coleoptera: Scarabaeidae) attacking ornamental plants in the urban area of municipality of Forestal, Minas Gerais State, Brazil. The initial attack was observed on the ornamental palm species Dypsis lutescens (Arecaceae) whose leaves were completely consumed, and then these insects began to feed on Canna indica (Cannaceae), another ornamental species, which was found near to the first. However, in the same location newly planted fruit tree seedlings of Plinia trunciflora (Myrtaceae), Averrhoa carambola (Oxalidaceae) and Malpighia emarginata (Malpighiaceae) were attacked and completely defoliated. This report of damage to plants in urban areas by B. campicola demonstrates the need for studies on the behavior and feeding preference of these insects, and even their ability to adapt to different host plants.
Keywords: *Defoliating beetles, Coleoptera, urban pests.*

Contextualization

Feeding specializations of insects are very diverse, including digestion of debris, wood, blood, different plant parts and others (Gullan & Cranston, 2012). Insects of the order Coleoptera are extremely diversity and abundance and are of utmost importance in different ecosystems, with functions ranging from decomposers, pollinators, predators, scavengers, coprophagous, mycophagous, scavengers and generalist species (Borror & Delong, 2004). The family Scarabaeidae has a wide geographic distribution, consisting of approximately 4,500 known species in the tropical and equatorial region (Louzada, 2008). Some species can be considered agricultural and forest pests, and are therefore of importance in various environments (Berti & Krugner, 1986).

Bolax campicola is a beetle that is not extensively studied which its morphologic traits are similar with *Bolax flavolineata* (Mannerheim, 1829) (Coleoptera: Scarabaeidae), most investigated specie of this genus, because its potential to attack and cause damage in forestry essences, mainly *Eucalyptus* (Fernandes, 2004; Pires et al., 2014; 2013). The dispersion capacity of *Bolax* sp. contributes so that it can find shelter and food in different habitats, which helps make it able to inhabit and adapt to great environmental diversity (Gullan & Cranston, 2012).

The records of plants attacked by of *Bolax* ssp. include the eucalyptus, vines, quince, plum tree and soybean (Anjos et al., 1986). In this communication we are reporting same plants that were attacked by *B. campicola,* being two ornamental and three fruit in the municipality of Forestal, Minas Gerais, Brazil.

One of the plants attacked by the coleopterous beetle was *Dypsis lutescens* (H.Wendl.) Beentje & J. Dransf. (Arecaceae), commonly known as "bamboo palm" (Figure 1). It is one of the most famous ornamental palms, the most cultivated in Brazil, and can reach up to nine meters tall. It has pinnate leaves with bright green leaflets (Noblick et al., 1983). The others species attacked were *Canna indica* L. (Cannaceae), and *Malvaviscus arboreus* Cav. (Malvaceae). The first one is popularly known in Brazil as "cana-da-índia", "biri", "bananeira de jardim", "pariri", " or "caeté" and another specie is popularly known as "malvavisco" or "hibisco-colibri". Both species presented completely damaged leaves due to attack of this Coleoptera (Figure 2 A, B1 and B2).

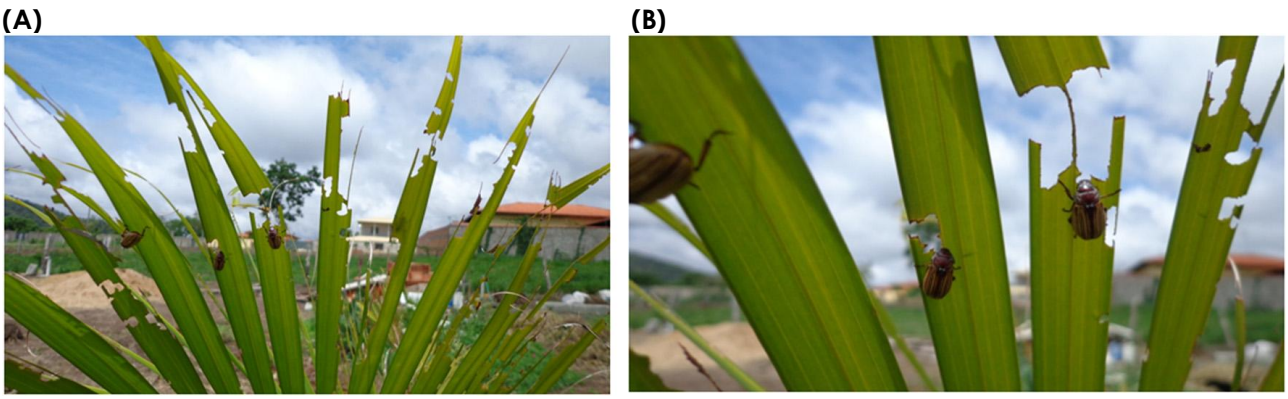

Figure 1. (A) and (B).Attack of the defoliator beetle *Bolax campicola* (Coleoptera: Scarabaeidae) on *Dypsis lutescens* (H. Wendl.) Beentje & J. Dransf. (Arecaceae) in the urban area of the municipality of Forestal, Minas Gerais, Brazil.

All plants were located in an urban area of the municipality of Forestal, Minas Gerais (19°53'52.31"S; 44°25'49.88"W). In November 2012 a total of 135 adult beetles were captured damaging two palm trees. After complete defoliation of the palm

(*Dypsis lutescens*) the adult beetles migrated to the neighboring plants *C. indica* and *M. arboreus*; in the early days these plants served only as a shelter, but after two days began to damage the leaves of these plants, destroying the entire leaf area.

In November 2013 there was a new infestation of these coleopterous beetles in the same plants (*D. lutescens, C. indica* and *M. arboreus*). However, newly planted seedlings of *Plinia trunciflora* (O. Berg) (Myrtaceae), *Averrhoa carambola* L. (Oxalidaceae) and *Malpighia emarginata* D.C. (Malpighiaceae) had parts of their leaves damaged in this new infestation, in the same area. In the infestation which occurred in 2013 approximately 190 beetles were collected on plants that were being damaged.

The insects collected were taken to the laboratory of Entomology, Federal University of Viçosa, Campus UFV-Forestal for identification, and then confirmed by specialists in scarabeids Rutelinae. During the first occurrence registry that was in November 2012, immediately after performing the collections, new insects appeared, which were probably coming from neighboring areas of pasture and secondary forest, and continued to cause defoliation of the plants.

Figure 2. Detail of the plant *Canna indica* L. (Cannaceae) (A) and *Malvaviscus arboreus* (B and C) with leaves damaged as a result of the attack of *Bolax campicola* (Coleoptera: Scarabaeidae) in the urban area of the municipality of Forestal, Minas Gerais, Brazil.

The studies of Medri & Lopes (2001) in the Mata dos Godoy State Park indicated that the conversion of forest to pasture resulted in a loss in species diversity belonging to the family Scarabaeidae, as this alteration may provoke changes in the amount of resources. Thus, a possible reason for the change of habitat, and consequent feeding behavior of *B. campicola*, may be the modification of the natural environment which causes changes in feeding behavior of this species to maintain its survival.

This species was found in different cultures, but there are no reports of its occurrence on ornamental plants. The high adaptive capacity of these insects with regards to their diet, especially in urban areas and plants used for urban landscaping, is important information for planning and creating orchard gardens in urban areas, since in these locations chemical control of insect infestations can cause several drawbacks.

References

ANJOS, N., SANTOS, G.P., ZANUNCIO, J.C. Pragas do eucalipto e seu controle. **Informe Agropecuário** 12: 51-58, 1986.

BERTI FILHO, E., KRUGNER, T.L. Manejo integrado de pragas e doenças em povoamentos de *Eucalyptus* no Brasil. **Silvicultura** 11: 41-43, 1986.

BORROR, J. & DELONG, D.M. **Introduction to the Study of Insects** 7th Edition. Cengage Learning 888p. 2004.

FERNANDES, L.C. **Biologia de *Metaxyonycha augusta* (Perty) (Coleoptera: Chrysomelidae) e efeitos do seu ataque em eucaliptos, num sistema agroflorestal.** 86f. (Dissertação de Mestrado) Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brasil, 2004.

GULLAN, P.J., CRANSTON, P.S. **Os insetos: um resumo de entomologia.** 4th ed. São Paulo: Roca, 440p. 2012.

LOUZADA, J.N.C. Scarabaeinae (Coleoptera: Scarabaeidae) detritívoros em ecossistemas tropicais: biodiversidade e serviços ambientais. In: Moreirea, F.M.S., Siqueira, J.O. & Brussaard, L. (eds.) **Biodiversidade do solo em ecossistemas brasileiros.** Lavras, Editora UFLA. p.309-332, 2008.

MEDRI, I. M.; LOPES, J. Scarabaeidae (Coleoptera) do Parque Estadual Mata dos Godoy e de área de pastagem, no norte do Paraná, Brasil. **Revista Brasileira de Zoologia** 18: 135-141, 2001.

NOBLICK, L.R., BORGES, K.N., LEMOS, M.J.C. Levantamento das plantas ornamentais introduzidas no campus da Universidade Estadual de Feira de Santana. Sitientibus **Revista da Universidade Estadual de Feira de Santana** 3: 37-58, 1983.

PIRES, E.M., CORASSA, J.N., Nogueira, R.M., Manica, C.L..M., Soares, M.A. New geographical distribution and seasonality of *Costalimaita ferruginea* (Coleoptera: Chrysomelidae) on *Eucalyptus urograndis* in Guiricema, Minas Gerais, Brazil. **Scientific Electronic Archives** 5: 1-4, 2014.

PIRES, E.M., CORASSA, J.N., BARRETO, M.R., SOARES, M.A. New Report of *Costalimaita ferruginea* (Fabricius) (Coleoptera: Chrysomelidae) on *Eucalyptus* sp. (Myrtaceae) in Sinop - Mato Grosso, Brazil. **EntomoBrasilis** 6: 89-90, 2013.